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cluded within the mother-cell, while the tails have become disengaged and vibrate freely in the external fluid.

In the mother-cells, besides the spermatozoa in their vesicles of evolution, a large, well-defined, nucleus-like body, with considerable refractive powers, seems to be invariably present.

The motions of the free spermatozoa are peculiar, and consist in a succession of sudden jerks.

By permission of the Academy, Mr. T. A. Dillon explained a plan of his for ascertaining the deviation of ships' compasses arising from local attraction.

“SIR,—I have the honour to submit, for the consideration of the Royal Irish Academy, a plan which I hope will tend in some degree towards reassuring the proprietors and commanders of iron ships, whose uneasiness in consequence of Dr. Scoresby's communication, ‘On the Influence of Iron Ships over their own Compasses,’ has been, and still continues to be, of the most serious character.

“What Dr. Scoresby says is this :—‘So soon as a vessel made of iron puts to sea and undergoes the tossing and straining of the waters, she becomes an immense magnet, as it were, something in the same way that a poker is transformed into a magnet by striking it repeatedly with a hammer.’ And this distinguished philosopher goes on to state, that the loss of the *Tayleur*, and of many other iron vessels, can be assigned to no other cause than to the very startling one above mentioned ; for the proximity of such an enormous magnet to the delicate compass needles disturbs and overrules these instruments as a matter of course. The ship goes astray, and all hands perish.

“Now, it little matters whether Professor Scoresby's magnetic theory be correct in every particular or not. We know that the most admirably constructed instruments have mysteriously gone wrong, even after every scientific precaution had been taken to preserve and compensate them in the most perfect

manner. Whatever be the true theory, we know that vessels have been lost, and the only plan as yet proposed for obviating this danger is a recommendation by Dr. Scoresby himself, to place a compass at the mast-head for reference in case of suspicion, which is merely tantamount to saying, that the disease baffles, for the present at least, all his scientific skill. Professor Scoresby is wise enough to know that the motion of a compass situated on the top of a mast, even when masts are forthcoming, which sometimes is *not* the case, would cause the most perfect gimbals to sulk or give way. Again, a steam-ship's funnel is made of iron, which fact confuses matters more than ever.

“We make out plainly enough, however, that the more distant a compass can be placed from the seat of danger, the more trustworthy it becomes in the eyes of the ship's commander. Consequently if, regardless of masts or internal attraction, we can have a reference compass always at hand, the binnacle instruments may try any vagaries they please without disturbing the ship's running in the least. Day by day we remark their deviation, and make allowances accordingly.

“My plan is meant as a simple mode of discovering the error to which the binnacle compasses are liable in consequence of the ship's local attraction.

“1st. Let it be granted that a line may be drawn along the keel of the vessel, and prolonged indefinitely astern.

“2nd. That there exists astern of the ship a point on this line where, if we place a compass, the needle does not suffer from the ship's influence, but exhibits the true polarity.

“Now the difference between the binnacle compass and the compass alluded to must be the error we so anxiously wish to discover. As magnetic attraction decreases as the square of the distance, I should say that a compass one hundred yards or so astern would not be influenced by the iron of the ship : consequently :—

“ See that the jolly-boat, towing under the counter, drops astern a hundred yards or so, and that it contains a careful officer and good compass, seeing of course that the boat is free from *iron* ballast, rings, &c. Pay out the tow-line until the boat, as described, is a hundred yards astern. One officer is now in the boat ; another stands by the binnacle compass ; a third takes his position at the taffrail, looking towards the boat. The officer in the boat, and the officer at the binnacle, each keeps one eye, as it were, upon his respective instrument, and one upon a little flag which the third officer, who stands at the taffrail, holds in his hand. The moment this look-out officer finds the jolly-boat’s head and stern to be on a line with the keel of the ship, he lowers the flag. The other two officers check their respective compasses as the flag falls. *The difference between the ship’s compass and the boat’s compass is the error sought after.*

“ Because, if the ship’s course was ‘ due east,’ the course of the boat was ‘ due east’ likewise, since her head and stern were in a line with the ship’s head and stern by observation. If the course of the ship and boat were ‘ due east,’ the *fleur de lis* on binnacle and boat should stand *at right angles* to the bows of ship and boat. But the local attraction of the ship interferes with this result, and as the boat’s compass is the correct one, the difference between the instruments is the influence of local attraction on board the ship.

“ As a first step, this is the simplest mode of escaping from the threatened overturning of our faith in the mariner’s compass. The other plans of ‘ floating compasses’ are merely alterations in the form of the experiment, which do not interfere with the principle just detailed in the slightest degree. I give the following as the best I have devised.

“ Take a long plank of timber ; cut it sharp at either end ; make a hole in the middle, insert a compass therein, having a spring so arranged that by *chucking* a trigger the needle is instantly arrested at any point. Place a shining mark at the head and stern of this plank. Now float it astern at the end

of a log-line, and sight the two shining points alluded to from the ship's taffrail. Chuck the line and the thing is done; for on hauling the plank alongside and examining its compass (which, it is needless to remark, is impervious to water), the difference between the plank's head and stern and the ship's head and stern, as taken by observation and the position of their cards at the same moment, indicates, as in the previous experiment, the precise amount of derangement caused to the ship's needle by local attraction.

“In concluding these observations, will you permit me to state that I am not satisfied with Dr. Scoresby's theory? at the same time I cannot presume to deny it as yet, at least. You will notice that my plan is a mechanical test for determining the error of a ship's compass, whether that error arises from imperfect compensation originally, shifting of guns, &c., accidental presence of iron or steel in the immediate neighbourhood of the instrument, or from the percussion and straining of the waters, as Dr. Scoresby has ascertained.”

W. R. Wilde, Esq., on the part of George O'Flaherty, Esq., of Lemonfield, presented a curious oval wooden bowl or vessel with handles, and carved out of timber, found in the turf-bog near the old church in the Demesne of Lemonfield, and about four and a half feet from the surface. Two others were found at the same time, but in the haste of the workmen to examine their contents they were broken and lost; the one presented was saved by a gentleman who happened to pass at the time of the discovery. The three vessels contained neither coins nor other antiquities. Mr. Wilde also presented an iron spear-head, a dagger, and swivel gun constructed with a chambered breech, found in 1853 by George Warder, at Inishdauwee, an island in Lough Corrib, near Oughterard. These articles were discovered in consequence of attention being drawn to the spot by a fragment of iron projecting above the surface.
